


Systems theory

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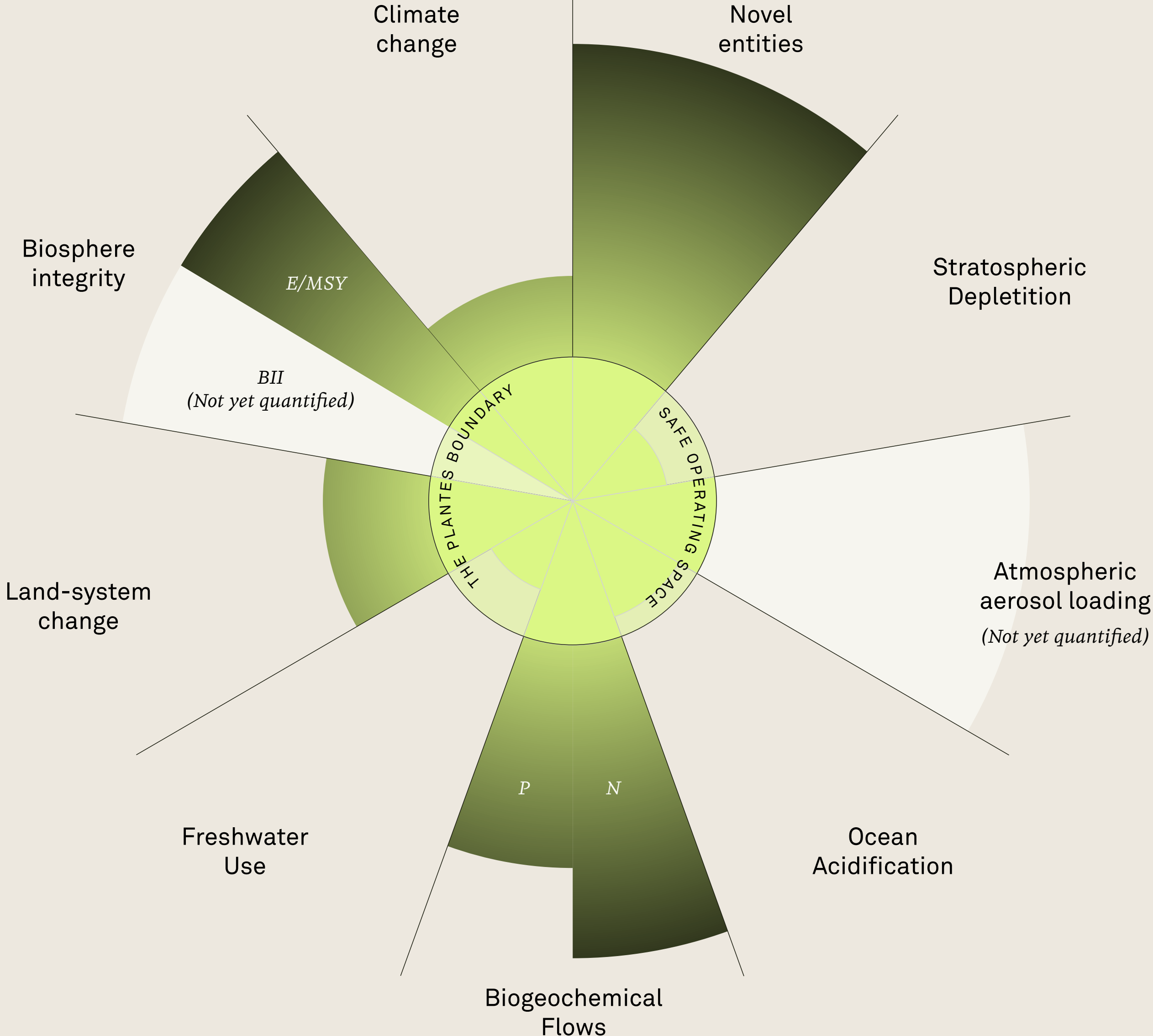
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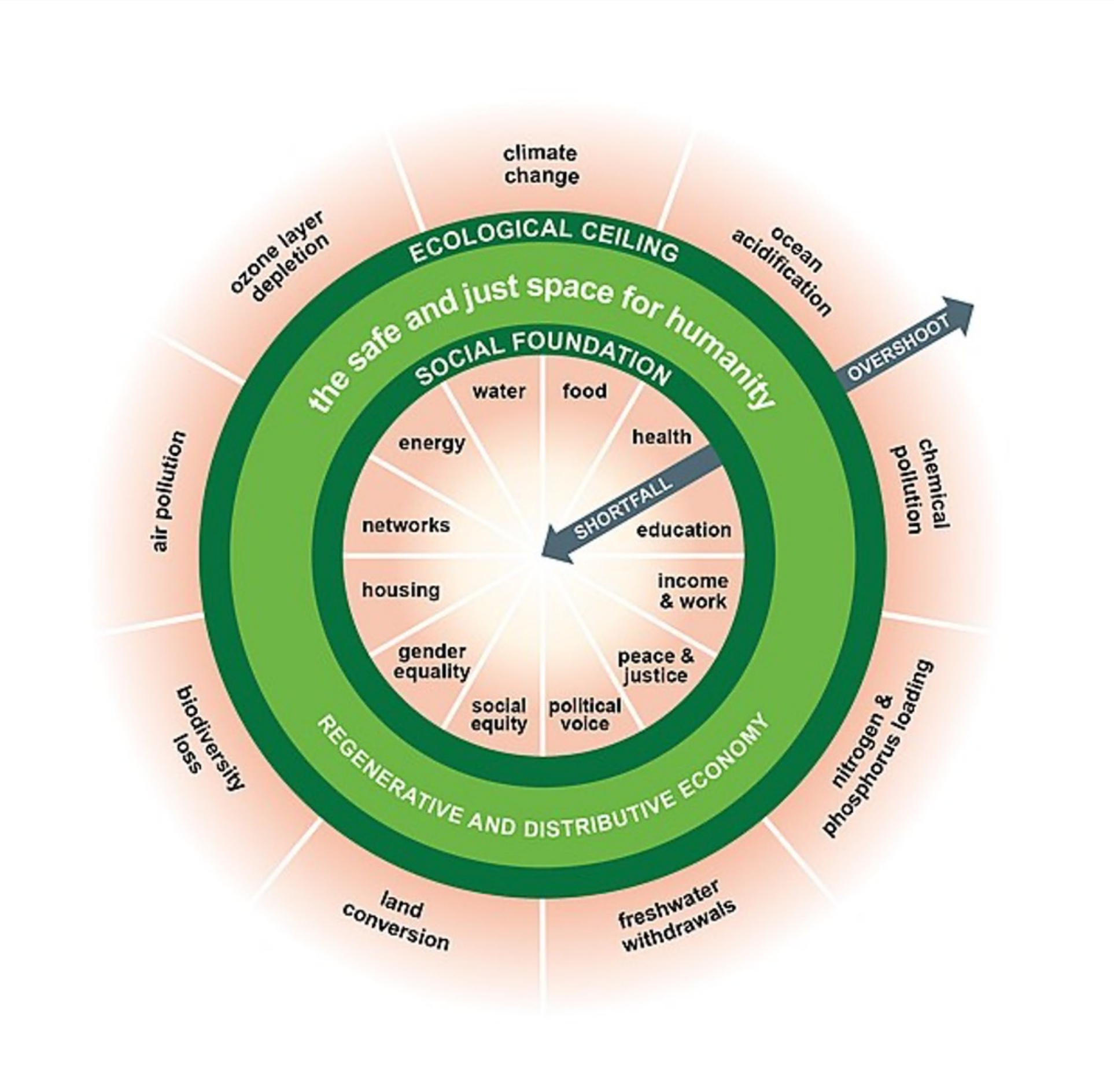
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1.
The sustainability challenge

Nine Planetary Boundaries



The social foundation within planetary boundaries



1.1. Global interconnectivity

Complexity



A complex system is one that it is open, non-linear, with interconnected and interacting elements

e.g. Preiser et al. (2018)

Complexity

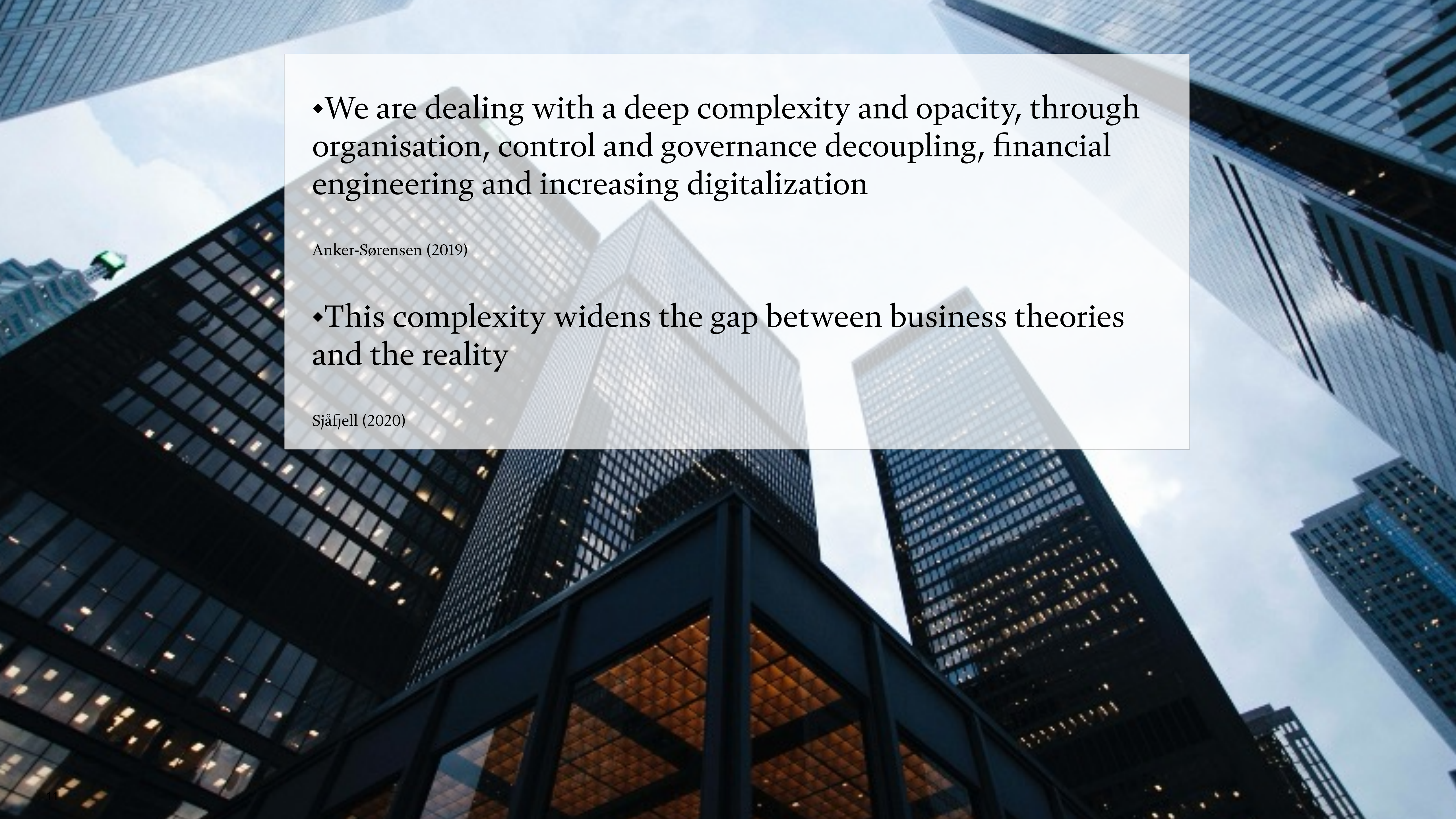
- ◆ One of the most significant benefits with using a complex systems lens is that it allows us to study governance systems at an aggregate level
- ◆ Complex systems are aggregations of regulations, institutions, rules, actors, norms, and decision-making procedures in various combination

Orsini et al. (2019, p. 3)



COVID-19

1.2. Contemporary business practices



◆We are dealing with a deep complexity and opacity, through organisation, control and governance decoupling, financial engineering and increasing digitalization

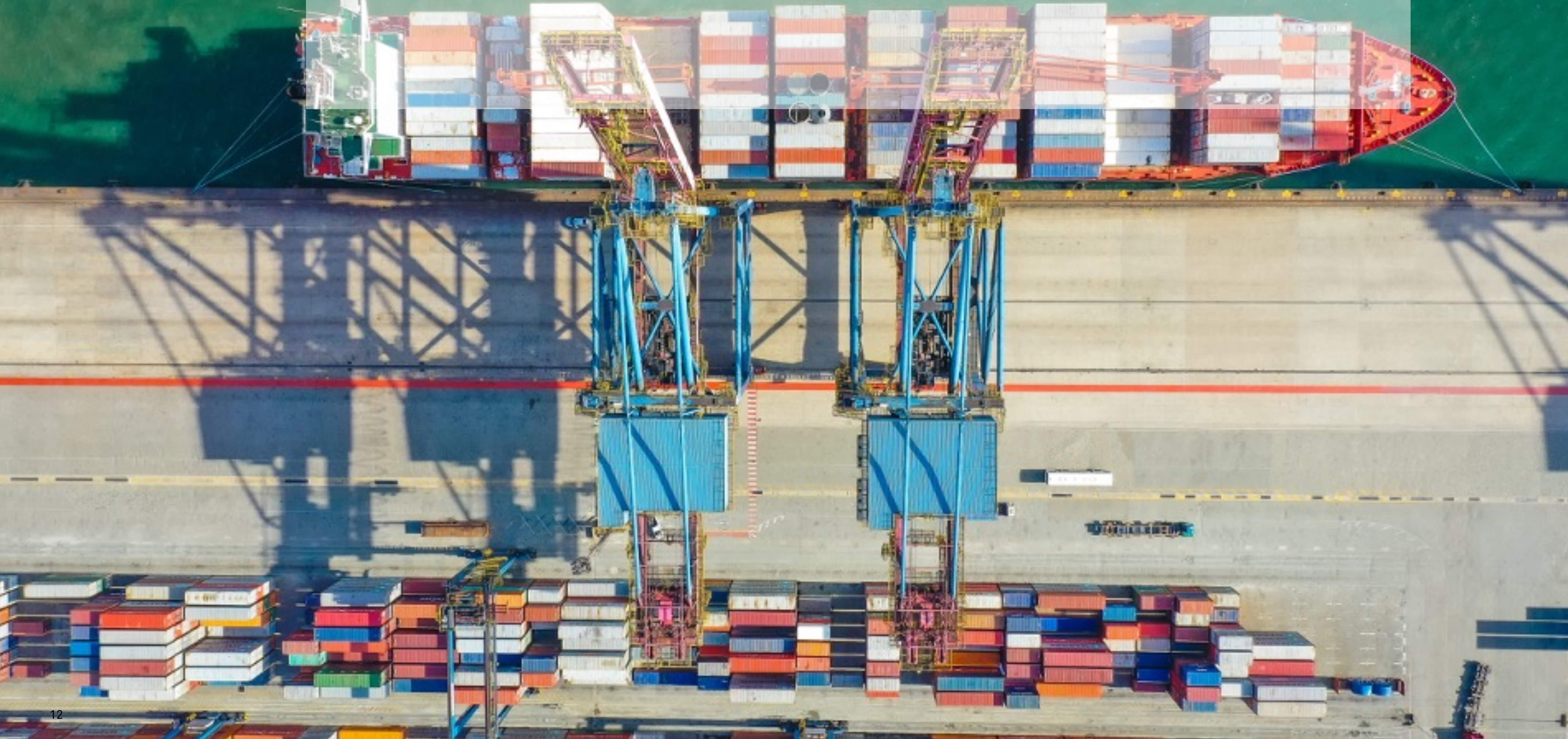
Anker-Sørensen (2019)

◆This complexity widens the gap between business theories and the reality

Sjåfjell (2020)

Corporate activities frequently violate the rights of workers, consumers and communities across global value chains

Sjåfjell & Taylor (2015); Sjåfjell & Bruner (2019)



2. Systems thinking



2.1. Systems

Systems

A system is 'a set of elements or parts that is coherently organised and interconnected in a pattern or structure that produces a characteristic set of behaviours, often classified as its "function" or "purpose" '

Meadows (2008, p. 188)

A system is 'more than the sum of its parts' and 'may exhibit adaptive, dynamic, goal-seeking, self-preserving, and sometimes evolutionary behaviour'

Meadows (2008, p. 12)

2.2. System theory

Systems theory

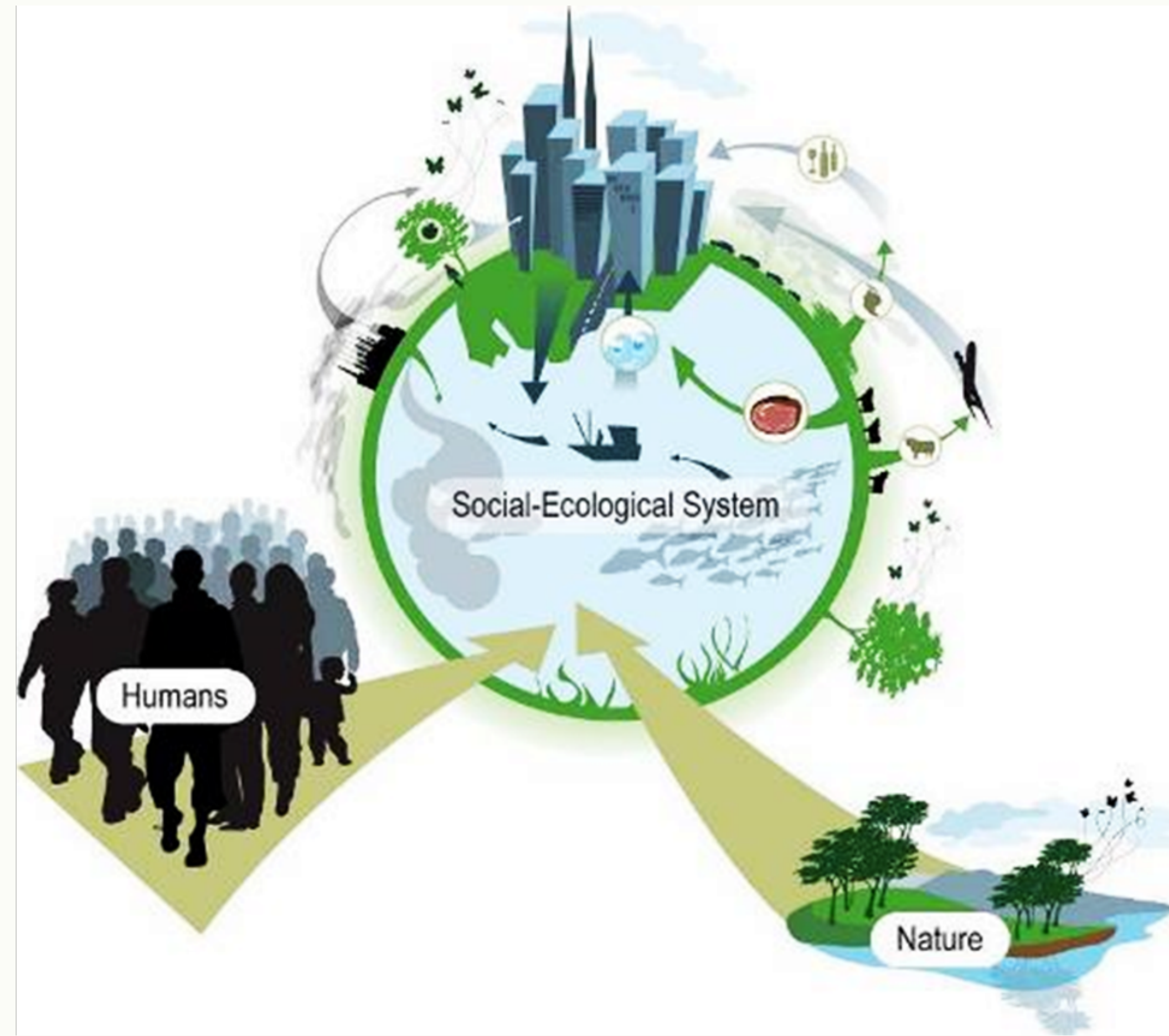
- ◆ Many researchers in different disciplines have highlighted the need to use a systems approach when studying complex systems
- ◆ Biologist Ludwig von Bertalanffy that is considered the founder of systems theory
- ◆ A systems approach has also been used in areas such as behavioral theory within companies
- ◆ Systems thinking can help to understand and deal with complexity in a better way than linear thinking and is particularly relevant within the field of sustainability

2.3. Social-ecological systems thinking



Anthropocene

Social-ecological systems



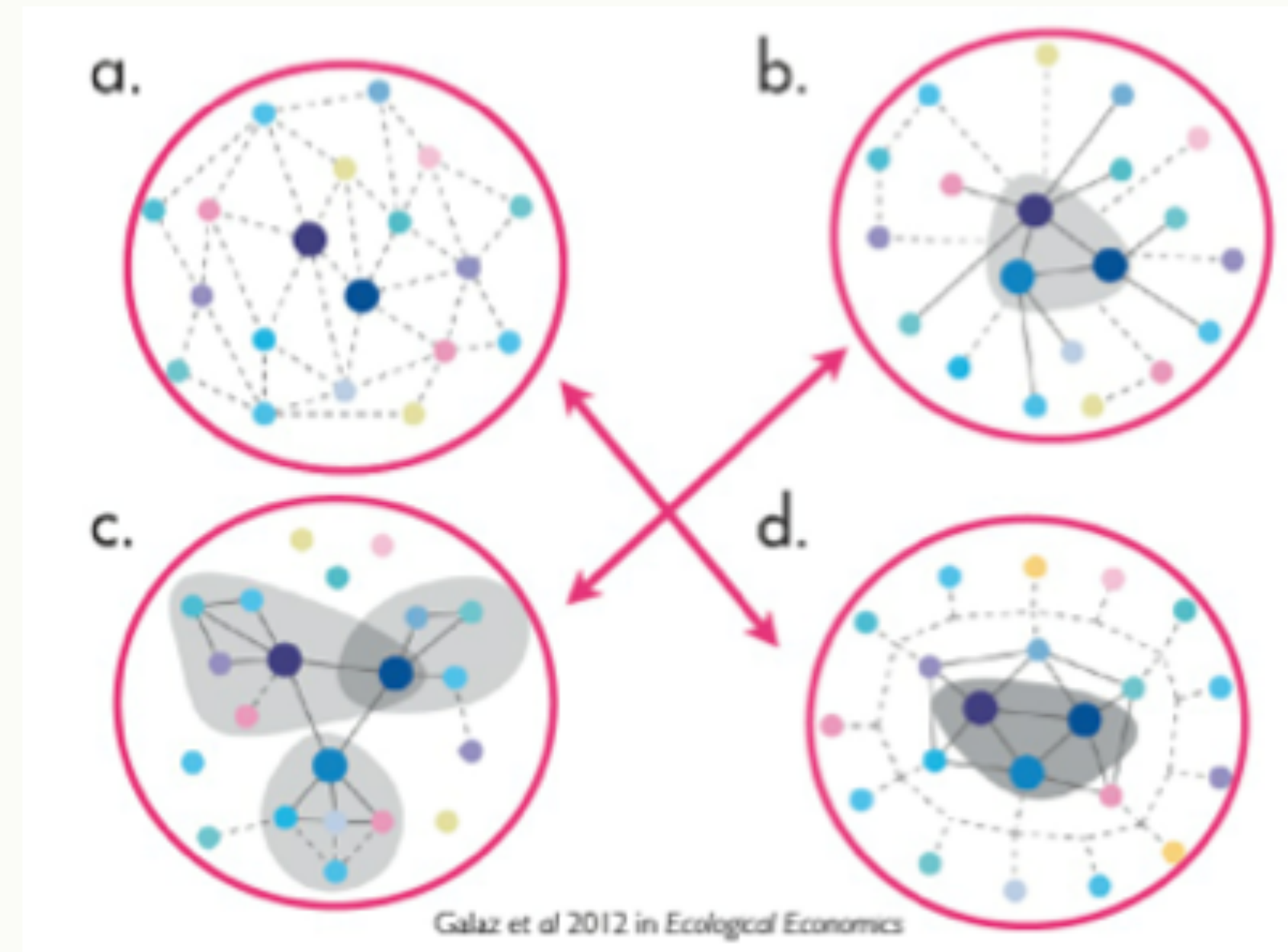
3.
Systems thinking and the law



3.1. Law-making fit for purpose

Polycentric governance

V. Ostrom et al. (1961); e.g. E. Ostrom (2010); Toonen (2010)



From 'weak' to 'strong' polycentricity. The figure illustrates different processes of polycentric coordination and order.

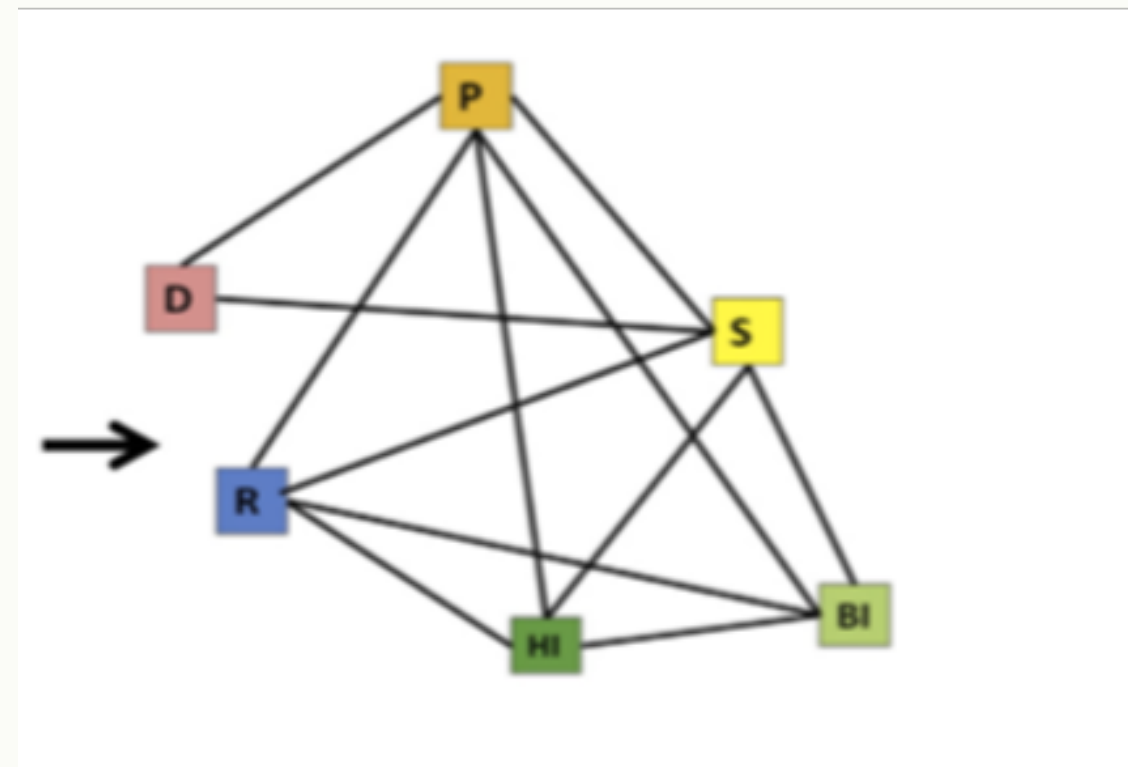
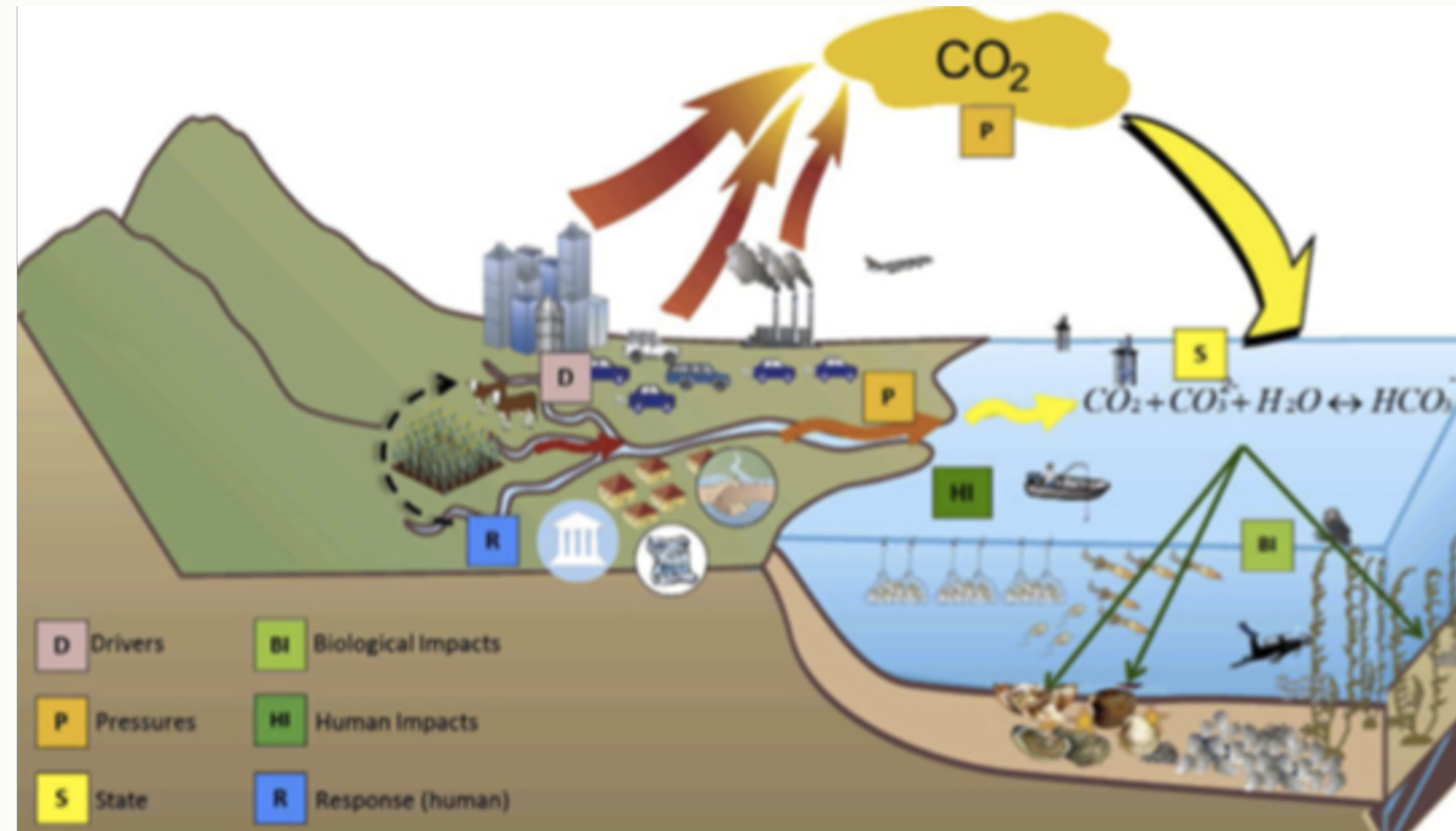
(A) illustrates a simple communication network that allows for mutual adjustment in multi-actor settings.

(B) illustrates a stronger form of coordination as it combines communication linkages (dotted lines), with formal partnerships arrangements (regular lines).

(C) denotes a stronger form of polycentricity involving tangible joint projects/experiments between actors (shaded areas) often with overlap.

(D) is the strongest form of polycentric order, and involves strong formal ties between key actors as well as a suite of joint projects and the evolution of rules.

Institutional fit



Earth System Law

Kotzé and Kim (2019); Kotzé (2020)



3.2. Systems thinking in future practice

Sustainable Market Actors For Responsible Trade (SMART)

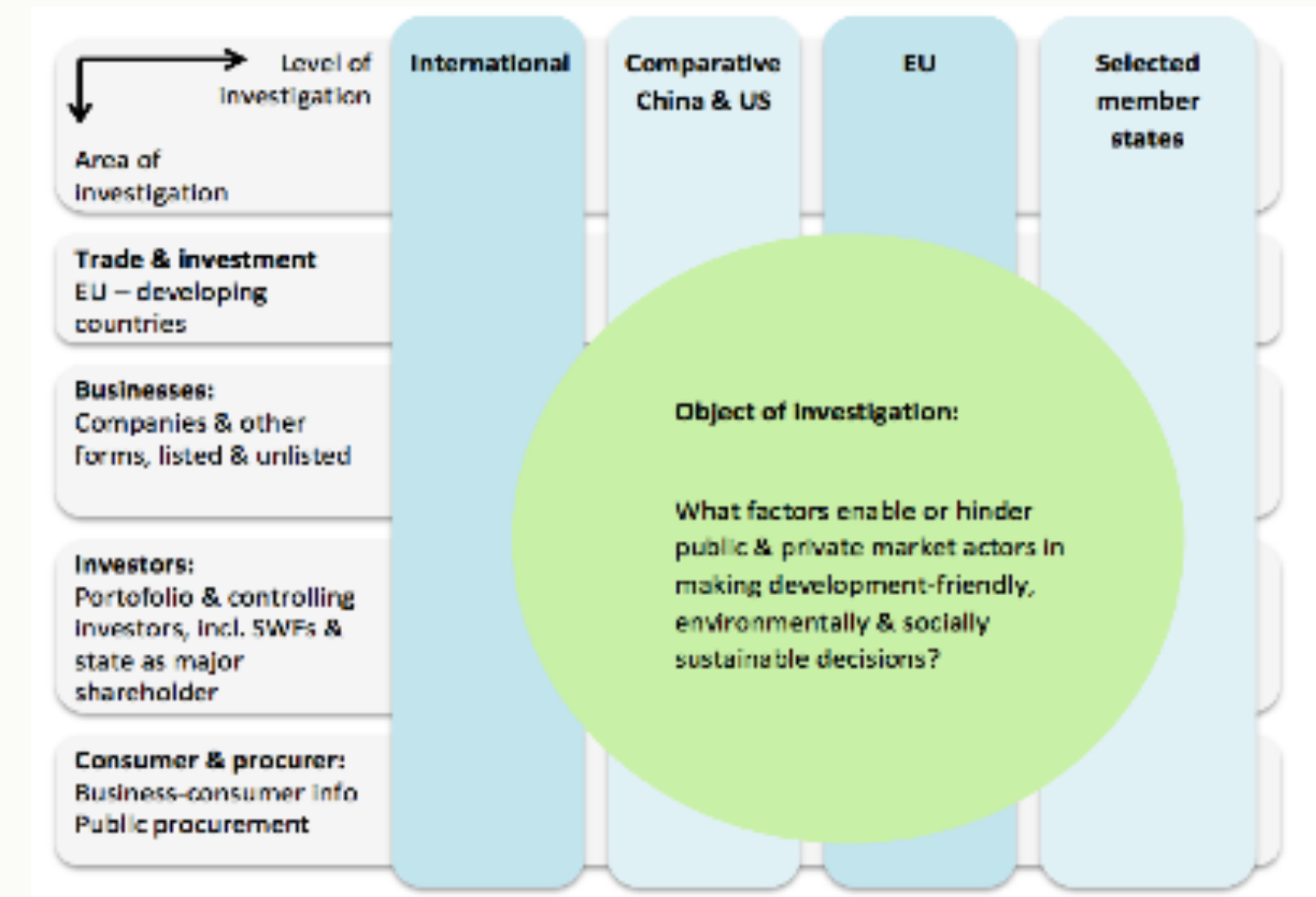
SMART analysed the regulatory complexity within which European market actors operate. With a focus especially on international supply chains of products sold in Europe, the aim was to find out what prevents and what promotes a shift towards sustainable development.



Entry point and overview of the SMART approach

- ◆ Systems thinking based on sustainability science
- ◆ Interdisciplinary, multi-level and polycentric regulatory analysis
- ◆ Comparative regulatory mapping and analysis

Sjåfjell & Ahlström (2021)



4. Conclusion

System thinking facilitates

- ◆ a better understanding of how to see the relationship between structure and behaviour
 - ◆ managing, adapting and seeing a wide range of choices that are presented to society
 - ◆ the identification of root causes of problems and enables the identification of new opportunities
 - ◆ revealing interconnectivity of problems
- > which can be better structured and evaluated and eventually compared
- > enable for priority setting

The future doesn't exist.
It's created!

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